Shared Challenges, Shared Successes . . .

THE U.S./GERMAN ENVIRONMENTAL TECHNOLOGY EXCHANGE

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Background

Environmental stewardship in the United States and in Germany presents common challenges to the military missions of both countries. There is a Master Data Exchange Agreement (DEA) between the United States and Germany that provides the framework to exchange data in a variety of research and technology areas. Areas of research and data exchange procedures are more fully described and explained in individual annexes included as addenda to the DEA. The four annexes discussed in this article specifically deal with the challenges associated with resolving environmental problems: hazardous materials/material substitutes/air (dealing with pollution prevention, waste minimization, material substitutes/recovery, and recycling); soil (focusing on soil contamination and remediation issues); water (including water contamination, remediation, and purification); and demilitarization and disposal of conventional munitions.

The key individuals for the U.S./German (GE) Environmental Technology DEA are the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health for the United States, and the Executive Director of the Federal Office of Defense Technology and Procurement (Bundesamt für Wehrtechnik und Beschaffung (BWB)) for Germany. U.S. and GE assistant project officers (APOs) coordinate and oversee the functions and operations of the U.S./GE DEA environmental annexes. U.S. and GE technical project officers (TPOs) for each environmental annex are assigned as technical leads and report through the APOs.

Planning meetings are scheduled every 6 months to discuss technical project results, evaluate progress toward goals, coordinate future goals, and to foster relationships. General meetings are held every 18 months, with the next one scheduled for June 2001 in the United States.

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Challenges

Environmental stewardship represents a vital component of the Army's mission in the United States as well as in Germany. This stewardship supports mission readiness by complying with environmental laws, maintaining the availability of training lands, cleaning up and preventing pollution, improving soldier/family quality of life, and strengthening community relationships. Compliance and restoration continue to be vital components of the Army's environmental program.

Many common challenges are associated with environmental stewardship for both the U.S. and GE military missions. It is important to note that these challenges may be dealt with through joint demonstrated/validated technologies that result in significant cost savings. These technologies are especially valuable in the current climate of close regulatory scrutiny and shrinking technical and budgetary resources.

The first step in a jointly demonstrated/validated technology exchange is to identify locations for possible remediation and to identify

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possible technologies for demonstration and validation. When this is achieved, the mutual technical criteria for the demonstration project must be identified. Identifying these criteria is essential for the technology to be accepted for application in Germany. The U.S. proponents then identify and coordinate U.S. industry, academia, and other parties that may benefit from participating in the demonstration and validation process. The GE proponents then work with their local authorities on the logistics of adopting the new technologies. Maximizing the benefit of these technology demonstrations to the military mission of both countries requires a great deal of communication, coordination, and cooperation between the proponents on both sides of the Atlantic.

Past Achievements

The environmental annexes have been some of the most active within the DEA. For example, technical personnel have regularly attended planning meetings every 6 months, and large delegations of U.S. and GE proponents have met at general meetings to evaluate progress, exchange technical information, and set new goals for ongoing efforts. Since its inception, the DEA has resulted in strong professional relationships and increased knowledge through information sharing. There have been many mutual benefits gained from the data sharing. For example, the DEA has served as a precursor for joint demonstration projects, one of which was a side-by-side demonstration of U.S. and GE technologies to resolve a groundwater problem at Rhein-Main Air Force Base in Germany.

A Case In Point

A good example of the type of benefit resulting from the Environmental Technology DEA is the use of electrokinetic (EK) treatment of soils. EK treatment technology is used in the United States to remediate soils contaminated with heavy metals. Heavy metal contamination is a problem at U.S. military ranges as well as at GE sites.

More than 130 grenade range sites in Germany now receive a high level of regulatory attention. Based on DEA-fostered interaction, the GE Ministry of Defense (MOD) is undertaking the demonstration of an *ex-situ* EK remediation of metal-contaminated soil on a grenade range in Bergen, Germany. The GE MOD funds this technology demonstration. The United States provides technical input and reviews progress for this effort based on prior U.S. involvement in the EK remediation and demonstration programs at the U.S. Army Corps of Engineers Waterways Experiment Station and the U.S. Army Environmental Center.

The EK project clearly illustrates the effectiveness of hands-on sharing of expertise and resources to achieve a common purpose: solving pressing environmental problems associated with military operations. The result is refinement of a technology that could improve environmental cleanup strategies at United States Army, Europe (USAREUR) and GE military sites.

Future Actions

At the most recent planning meeting in early November 2000, attendees decided to continue to focus on the EK demonstration project. Other environmental subjects were also discussed. These included bio-based hydraulic oils and lubricants, test chamber environmental effects, silicon-based surface coatings for ships, plasma arc technology, and inorganic and organic contaminants in soil.

Next Meeting

The next U.S./GE Environmental Technology DEA general meeting will be held in Arlington, VA, June 18-22, 2001. This meeting will allow U.S. and GE counterparts to evaluate the successes and lessons learned from the environmental technologies currently being demonstrated, as well as consider new and innovative technologies for possible inclusion in future demonstration projects.

More Information

Additional information on the focus areas of the Environmental Technology DEA Annexes is available from the U.S. TPO for each annex by contacting Plexus Scientific Corp. in Alexandria, VA, at (703) 845-8492.

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